CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 85-121

WASTE DISCHARGE REQUIREMENTS FOR:

POTRERO HILLS LANDFILL, INC. AND
SOLANO GARBAGE COMPANY
FAIRFIELD, SOLANO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

1. Potrero Hills Landfill, Inc., the site legal owner, and the Solano Garbage Company, the landfill operator, (hereinafter referred to collectively as the discharger) by application dated November 11, 1984 has applied for a permit to operate a Class III landfill on 320 acres south of Fairfield in Solano County. The project site, as shown on Attachment A, which is incorporated herein and made a part of this Order, is located approximately one mile south of State Highway 12 at the southern end of Emmington Road.

2. The sanitary landfill will eventually occupy 190 acres of the 320 acre site. The project has an approximate lifetime of 72 years, at a disposal rate of about 130 tons of refuse per day with a three percent increase in disposal rate per year. The area will be filled in five consecutive stages, pursuant to submitted plans. This landfill will replace the existing Solano Garbage Company Landfill to serve the longterm disposal needs of Fairfield, Suisun City, and the Green Valley unincorporated areas of Solano County.

3. The discharger proposes to accept for disposal non-hazardous solid wastes, dewatered water treatment and sewage sludges, construction debris and other inert materials, and agriculture wastes excluding manures and other high-moisture content materials.

4. The landfill will be located in the central valley of the Potrero Hills. This valley was formed by a large geologic fold structure referred to as the Potrero Hills Anticline. The core of this anticline is underlain by a very thick (700^{+} feet) section of low permeability claystone/shale. The majority of the landfill will be underlain by these claystone/shale sediments that have measured inplace

permeabilities of $1x10^{-6}$ cm./sec to $1x10^{-7}$ cm./sec. The remainder of the landfill will be underlain by moderately permeable (10^{-4} to 10^{-5} cm./sec) deposits of Domengine Sandstone. The areas of the landfill underlain by the Domengine Sandstone will be provided with a minimum of five feet of compacted clay liner that has a minimum permeability of $1x10^{-6}$ cm./sec.

5. The nearest active fault to the site is the Green Valley Fault; located 10 miles west of the site. The Hayward-Rodgers Creek Fault and the San Andreas Faults are located approximately 26 and 43 miles west of the site, respectively. Additionally, an unnamed fault crosses the center of the site. The investigations of this fault (Cooper-Clark & Associates, 1972; EMCON Associates, 1983 and 1985) conclude that the excavations show no evidence that this fault is active or potentially active. This fault is not a known Holocene fault.

6. The groundwater system beneath the site consists of a surficial system of residual soil and alluvial deposits, and a bedrock system composed of marine- deposited claystone, siltstone, and sandstone. The occurrence of groundwater in the surficial residual soils and alluvial deposits is limited and available data indicates that it occurs in these deposits only seasonally.

7. The marine deposited claystone and siltstone (identified as the Capay and Unnamed Formations) that underlies approximately 130 acres of the 190 acres proposed for landfilling, consists of a shallow, weathered bedrock zone which extends to an approximate depth of 25 feet, and a deep, unweathered bedrock zone underlying the weathered zone. This formation is also overlain with a residual soil layer. The shallow weathered zone consists of silty claystone with closely spaced fractures. Available data indicates that these fractures decrease with depth in the weathered zone. Groundwater occurs in limited quantities in the weathered zone of the Capay formation within the fractures. The movement of the groundwater found within the fractures is limited by the low permeability ($1x10^{-6}$ to $1x10^{-9}$ cm/sec) of the shallow bedrock. The discharger has submitted plans, that are incorporated as a part of this order, that will provide for a compacted clay liner in areas of the Capay Formation that have increased permeability due to cracks.

8. Groundwater also occurs in the Domengine Sandstone formation that is found along the northern border of the proposed landfill; below elevations of 60 feet above Mean Sea Level. This groundwater is approximately 40 feet beneath the ground surface. When limited quantities of surface runoff infiltrates into the Domengine Sandstone the water will migrate down vertically along the dip of the anticlinal formation. The Domengine formation is sandwiched between the Capay formation on the south, towards the interior of the valley where the refuse will be placed, and the Nortonville Shale formation to the north. The current data indicates that groundwater within the Domengine formation is hydraulically separated from the perched groundwater found in the shallow alluvium flanking the northerly external slope of the Potrero Hills. The discharger has also submitted plans, that are incorporated as a part of this Order, that will provide a five foot compacted clay liner with a minimum permeability of $1x10^{-6}$ cm/sec in areas where the Domengine Formation is found.

9. The groundwater found in the Capay and Unnamed formations is limited to water that becomes perched in the cracks of the weathered zone. These cracks continue down into the unweathered zone but they become smaller with depth; thereby holding smaller amounts of water. Additionally, these shale formations are classified by the U.S.G.S. as non-water bearing because of the difficulty in obtaining useable quantities of water. The difficulty in obtaining useable quantities of groundwater from the shale formations has been verified and is documentd in the EMCON Associates 1983 report of their site investigation. This shallow groundwater is of generally good quality for most beneficial uses; however, the high sulfate and dissolved solids concentrations, together with the difficulty in obtaining useable quantities, makes the groundwater unacceptable as a drinking water supply.

10. Background water quality levels for many indicator parameters have been established from analysis of water samples collected during the site investigation in 1983. The data used to establish these background levels does not conform with the methodology specified in the newly adopted regulations (Title 23, Chapter 3, Subchapter 15 of the California Administrative Code, hereinafter referred to as Subchapter 15), and should be reviewed after one year of additional data is collected.

11. Groundwater wells within a mile of the proposed landfill are found on the northern flank of the northern range of the Potrero Hills and in the eastern portion of the valley. The well located in the eastern valley is approximately 4000 feet hydraulically upgradient of the proposed landfill and is not threatened by the refuse disposal operations. The wells found on the northern flank of the Potrero Hills draw groundwater from the shallow surficial and alluvial deposits found on the slope of the hills. The beneficial uses of the above described wells include domestic supply and stock watering. The EMCON Associates 1983 report and the Cooper-Clark and Associates 1972 report both conclude, based upon their respective investigations of the site, that the groundwater found in the surficial deposits on the northern flank of the Potrero Hills is not hydraulically connected to the groundwater found within the interior valley of the Potrero Hills, proposed as landfill area. Additionally, the discharger has provided operating plans for the landfill that will provide for a 5 foot thick compacted clay liner, that will protect against degradation of the underlying groundwater and unsaturated zone and groundwater monitoring to demonstrate the effectiveness of the containment. The liner will cover the areas of the landfill underlain by the Domengine formation and areas of the Capay formation that when exposed, show an increase in permeability due to cracks.

12. Based on the limited poor quality perched groundwater in the weathered zone of the Capay and Unnamed formations and the separation of the site from usable groundwater deposits to the north of the Potrero Hills valley as described in the above findings this landfill meets the geologic siting standards of Subchapter 15.

13. Surface runoff from the proposed landfill flows to the west and the northwest and eventually flows into Hill Slough. Hill Slough is contiguous with Grizzly Bay and Suisun Bay.

14. Beneficial uses of the useable groundwater found in the surficial and alluvial deposits surrounding the Potrero Hills valley and of Hill Slough and Suisun Bay are:

    a. Municipal and domestic water supply
    b. Agricultural supply
    c. Water contact recreation
    d. Non-contact water recreation
    e. Warm fresh water habitat

f. Wildlife habitat
g. Estuarine habitat
h. Preservation of rare and endangered species
i. Fish migration and spawning

15. The discharger submitted, with their Report of Waste Discharge, a report entitled "Site Investigation and Development Study, Potrero Hills Sanitary Landfill" prepared by EMCON Associates in June 1983. This report, is amended by the following additional submittals: (1) "Potrero Hills Landfill Supplemental Information for Report of Waste Discharge", May 1985; (2) "Groundwater and Unsaturated Zone Monitoring System Potrero Hills Landfill", August 1985; (3) "Report of Disposal Site Information for the Potrero Hills Landfill", October 1984. The above cited reports propose to construct and operate the landfill in accordance with the requirements of Subchapter 15 and are hereby incorporated as a part of this Order.

16. The dendritic leachate collection system proposed meets the conditions specified in Section 2542(f) of Subchapter 15, provided that all waste placed within 5 feet of the liner are Class III wastes.

17. The Regional Board adopted a revised Water Quality Plan for the San Francisco Bay Basin on July 1, 1982 and this Order implements the water quality objectives stated in that plan.

18. The Solano County Department of Environmental Affairs and Community Development, as lead agency, adopted a Final Environmental Impact Report in March of 1984 entitled "Final Environmental Impact Report Potrero Hills Landfill", as required under the California Environmental Quality Act (CEQA). This report identifies the following adverse impacts relative to water quality:

a. Possible degradation of groundwater.

b. Runoff from excavated areas could carry sediment to Suisun Marsh waterways.

c. Leachate or surface runoff from active fill area could carry nutrients, heavy metals, and organic chemicals into adjacent surface waters affecting benefical uses.

The following measures will mitigate the identified adverse impacts:

a. Groundwater Degradation

The project is sited in an area where the refuse disposal will not pose a threat to significant groundwater resources. The groundwater in the vicinity of the landfill is already of poor quality and does not receive significant use. Groundwaters within the Hills appear to be effectively isolated from useable groundwater tapped in agricultural areas outside the Hills.

Design and operation of the sanitary landfill based on natural geologic conditions and in accordance with Subchapter 15 will ensure containment of landfill waste, minimize leachate production, and prevent adverse impacts on surface water and groundwater quality.

A minimum of five feet of compacted clays, that meets the requirements for permeability outlined in Subchapter 15, will underlie the entire landfill site. In areas where there is not a natural occurance of the clay barrier a compacted clay liner will be installed.

Installation of a leachate collection drain system under the landfill. This includes the monitoring and removal of leachate, should any be produced.

Monitoring of downstream groundwater with wells to insure the integrity of containment structures and leachate monitoring and control facilities.

b. Sedimentation

Sediment control berm and basins placed downslope of the fill area.

Revegetation of landfill and excavation areas, as soon as feasible, to prevent erosion.

c. Discharge of contaminated runoff or leachate from the site.

Construction of drainage improvements to direct surface waters away from refuse disposal operations.

Installation of underdrains to drain any springs not removed by soil cover excavation.

No hazardous or designated waste will be accepted at the site for disposal so these materials should not be present in the runoff.

Covering of all completed landfill modules with a compacted clay cap to meet the cover requirements of Subchapter 15.

Compliance with the regulations and standards contained in Subchapter 15 and waste discharge requirements adotped by the Board.

19. The Board notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

20. The Board, in a public hearing held on October 16, 1985, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Potrero Hills Landfill, Inc. and Solano Garbage Company, and any other persons that currently or in the future own this land or operate this facility, shall meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and shall also comply with the following:

A. PROHIBITIONS

1. The disposal of waste shall not create a pollution or nuisance as defined in Section 13050(l) of the California Water Code.

2. Wastes shall not be placed in or allowed to contact ponded water from any source whatsoever.

3. Wastes shall not be disposed of in any position where they can be carried from the disposal site and discharged into waters of the State or of the United States.

4. Hazardous and designated wastes as defined in Sections 2521 and 2522 of Subchapter 15, shall not be deposited or stored at this site.

5. High-moisture-content waste (those containing less than 50% solids) other than water treatment and waste-water treatment sludges shall not be discharged into the disposal area without prior approval by the Executive Officer. Such approval shall be granted only if there is adequate moisture holding capacity in the landfill based upon mass balances and previous monitoring of the relevent leachate control facility. A minimum solids-to-liquids ratio of 5:1 by weight must be maintained for the disposal operation overall. Futhermore, sludges shall not be discharged into the disposal area unless they contain at least 20% solids if primary sludge, or at least 15% solids if secondary sludge, mixtures of primary and secondary sludges, or water treatment sludge.

6. The discharger, or any future owner or operator of the site, shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:

   a. Surface Waters

      1. Floating, suspended, or deposited macroscopic particulate matter or foam.

      2. Bottom deposits or aquatic growths.

      3. Alteration of temperature, turbidity, or apparent color beyond natural background levels.

      4. Visible, floating, suspended or deposited oil or other products of petroleum origin.

      5. Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

b. Groundwater

1. The groundwater shall not be degraded as a result of the solid waste disposal operation.

7. Leachate from wastes and ponded water containing leachate or in contact with refuse shall not be discharged to waters of the State or the United States.

B. SPECIFICATIONS

1. Water used during disposal operations shall be limited to a minimal amount necessary for dust control and fire supression.

2. The site shall be protected from any washout or erosion of wastes or covering material and from inundation which could occur as a result of a 100 year 24 hour precipitation event.

3. Surface drainage from tributary areas, and internal site drainage from surface or subsurface sources, shall not contact or percolate through wastes during disposal operations or during the life of the site. Drainage ditches constructed over refuse fill will be underlain with a minimum 5-foot thickness of earthfill, as described in Drawings 1-5 and on page 29-30 of the report, "Site Investigation and Development Study Potrero Hills Sanitary Landfill" cited previously.

4. The entire site shall be underlain by a dendritic leachate collection and removal system as described in the discharger's submittal of June 1983.

5. Permanent leachate control facilities shall be constructed on the west end of the valley floor at the toe of fill areas A and I and along the south side of the landfill; as shown in the discharger's June 1983 report of waste discharge submittal. Measures shall be taken to ensure that leachate in the leachate collection system can flow freely into the leachate collection sumps. Measures shall also be taken to assure that the leachate collecion sumps and extraction wells will remain operational permanently.

6. The leachate collection and removal system shall be maintained and operated to prevent the buildup of hydraulic head on the bottom of the landfill as well as the toe berm that will be constructed along the west boundry of the fill area. This system shall be inspected monthly, and any accumulated fluid shall be removed.

7. The site shall be operated to ensure that all wastes will be a minimum of 5 feet above the highest anticipated elevation of underlying useable groundwater as described in Finding 12 and 14 of this order. In the event that near-surface springs, in the Domengine sandstone portion of the fill area, continue to discharge water or remain wet up to the time when refuse filling is to commence an underdrain system will be installed, consisting of a gravel pack, pertinent piping, and a complete clay seal at least 5 feet thick between the gravel pack and the refuse as described in the dischargers June 1983 submittal. This subdrain system shall drain the collected water off-site by gravity. The entire fill area found to be underlain by the Domengine sandstone formation shall have a 5 foot thick compacted clay liner installed. Unsaturated zone monitoring devices shall be installed beneath the liner.

8. The areas of the landfill underlain by the Capay and Unnamed shale formations which, when exposed during excavation, show any increase in permeability due to cracks, fractures, or any sand and gravel lenses must also be provided with a 5 foot thick compacted clay liner with a minimum permeability of $1x10^{-6}$ cm/sec. Unsaturated zone monitoring devices shall be installed beneath the liner. This liner may be constructed using the materials available at the site.

9. A geologic map of the base of the excavation shall be continuously updated as excavation proceeds. All fractures zones and cracks which might allow leachate to migrate into deeper geologic strata shall be clearly marked. Any such fractures zones or cracks which require artificial sealing shall be sealed with a 5 foot thick compacted clay liner that has a minimum in-place permeability of $1x10^{-6}$ cm/sec.

10. The discharger shall assure that the foundation of the site, the refuse fill, and the structures which control leachate, surface drainage, erosion and gas for this site are constructed and maintained to withstand conditons generated during the maximum probable earthquake.

11. As portions of the landfill are closed, the exterior surfaces shall be graded to a minimum slope of three percent in order to promote lateral runoff of precipitation. In addition, all completed disposal areas shall be covered with a minimum of 4 feet of cover and meet other applicable requirements as described in Article 8 of Subchapter 15.

12. The discharger shall operate the waste management facility so as not to cause a statistically significant difference to exist between water quality at the compliance points and the following Water Quality Protection Standards (WQPS). The compliance points are identified as wells GW-2 through GW-5 and the lysimeter in the attached self-monitoring program. The background wells are identified as wells GW-1 and GW-6.

    a. pH = 7.5
    b. Specific Conductivity = 900 micromhos/cm
    c. Chloride = 116 mg/l
    d. Total Organic Carbon = a value to be determined
    e. Nitrate Nitrogen = 3.9 mg/l
    f. Phenol = a value to be determined
    g. Total Kjeldahl Nitrogen = 580 mg/l
    h. Total Dissolved Solids = 580 mg/l

    These WQPS are based upon data collected during the site investigations and do not meet the specifications of Subchapter 15 for the establishment of background water quality. These WQPS will be evaluated, and possibly modified, after one years worth of monitoring data has been submitted.

C. PROVISIONS

1. The discharger shall comply with all Prohibitions, Specifications, and Provisions of this Order upon commencement of operations of the landfill. At least 30 days prior to commencement of filling of a specific

area of the site the discharger shall submit a report indicating compliance with all Prohibitions, Specifications, and Provisions of this Order. This shall include as-built construction diagrams. Filling of the area described in the report shall not commence until the Executive Officer approves this report based on its demonstration of compliance with this Order.

2. The discharger shall submit a proposal by February 1, 1986 for a periodic load checking program which will discover and discourage attempts to place hazardous or designated wastes in the landfill disposal areas.

3. The discharger shall submit quarterly monitoring reports in accordance with the attached self-monitoring program, beginning three months after the first refuse is placed in the disposal area.

4. The discharger shall periodically submit an updated geologic map as described in Specification B.9. Prior to the placement of refuse a detailed written description of the mapping procedure must be submitted and approved by the Executive Officer. The discharger shall evaluate each area of the landfill that is underlain by the shale formations where cracks or fractures occur and recommend one or more of the following: 1) The potential for leachate migration is small and no further action is necessary, 2) the potential for leachate migration is significant and unsaturated zone monitoring devices should be installed to monitor this possibility, or 3) significant leachate migration appears likely and therefore an artificial seal should be placed over the cracks or fractures and unsaturated zone monitoring devices installed beneath the liner to monitor the leachate migration. In the areas of the landfill underlain by the sandstone formation the discharger shall clearly outline the area on the geologic map and propose locations for unsaturated zone monitoring devices. If the discharger recommends 2) or 3) for the areas of the landfill underlain by the shale formations, and for the areas underlain by sandstone, no refuse shall be placed on the newly mapped excavation until the recommendation has been reveiwed and written authorization to proceed has been granted by the Executive Officer. If the discharger recommends 1), no refuse shall be placed on the newly mapped excavation until the map and the

recommendation have been in the possession of the Regional Board staff for at least 10 working days. The Executive Officer, may, at his discretion, extend this period of review by so informing the discharger. The Executive Officer's authorization shall be based on the discharger's demonstration that the cracks will not provide a direct path for leachate migration.

5. All reports pursuant to these Provisions shall be prepared under the supervision of a registered civil engineer or certified engineering geologist.

6. The discharger shall remove and relocate any wastes which are discharged at this site in violation of these requirements.

7. The discharger shall file with this Board a report of any material change or proposed change in the character, location, or quantity of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries of the disposal area or the ownership of the disposal site.

8. The discharger shall maintain a copy of this Order at the site so as to be available at all times to site operating personnel.

9. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations.

10. The discharger shall permit the Regional Board:

    a. Entry upon premises on which wastes are located or in which any required records are kept.

    b. Access to copy any records required to be kept under terms and conditions of this Order.

    c. Inspection of monitoring equipment or records, and

    d. Sampling of any discharge.

11. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not covey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations.

12. The discharger shall submit a dynamic or pseudo-static analysis which, within the limits of engineering analysis, shows that Specification B.10 will be complied with. No refuse shall be place until this analysis has been approved by the Executive Officer.

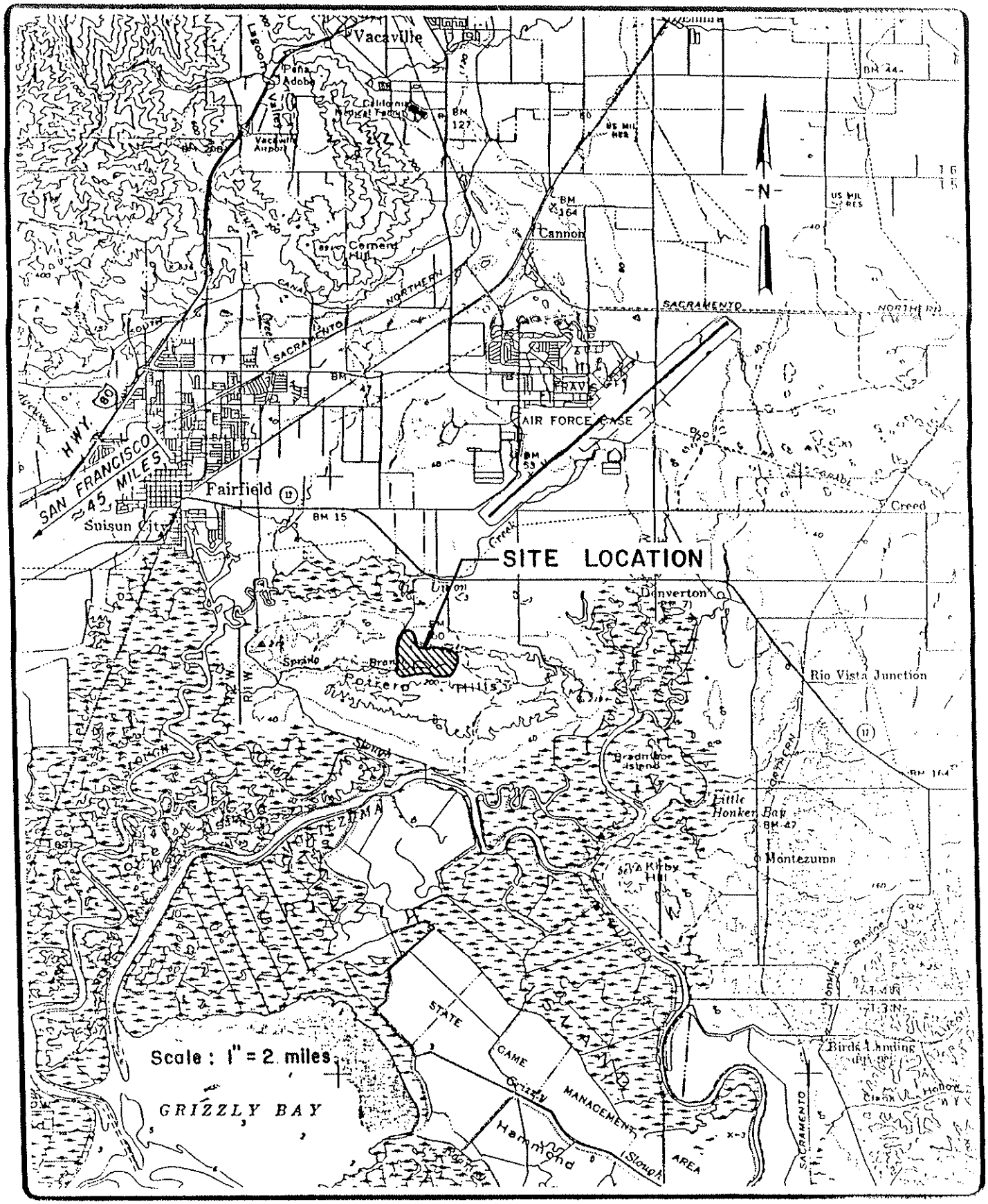
13. Prior to the disposal of any wastewater treatment sludges the discharger shall provide this Regional Board with analysis results from a waste extraction test performed on representative sludge samples. The samples should be analyzed for all priority pollutant heavy metals using the procedures outlined in Title 22, Section 66700. No sludges shall be disposed of until approval is given by the Executive Officer.

14. By January 15 of each year the discharger shall submit a report on the effectiveness of the leachate collection and removal system. The leachate system shall be tested annually pursuant to Section 2543(d) of Subchapter 15. Prior to the testing of the leachate system the discharger shall submit a proposal that outlines how the leachate system will be evaluated. This proposal must be approved of by the Executive Officer before implementation.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on October 16, 1985.

ROGER B. JAMES
Executive Officer

ATTACHMENT A



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

TENTATIVE SELF-MONITORING PROGRAM

FOR

POTRERO HILLS LANDFILL, INC.
SOLANO GARBAGE COMPANY
POTRERO HILLS LANDFILL
FAIRFIELD, SOLANO COUNTY

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16. This self-monitoring program is issued in accordance with Section C.3 of Regional Board Order No. 85- .

The principal purposes of a monitoring program by a waste discharger, also referred to as self-monitoring program, are: (1) to document compliance with waste discharge requirements and prohibitions established by this Regional Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of effluent standards or other limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and (4) to prepare water and wastewater quality inventories.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the latest edition of Standard Methods for the Examination of Water and Wastewater prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation, or other methods approved and specified by the Executive Officer of this Regional Board.

Water and waste analyses shall be performed by a laboratory previously approved for these analyses by the State Department of Health. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his laboratory and shall sign all such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A Grab Sample is a discrete water sample collected at any time.

2. Receiving Water(s) refers to any surface water which actually or potentially receives surface or groundwaters which pass over, through, or under waste materials. In this case the receiving waters are Spring Branch, Hill Slough, and contiguous waters.

3. Standard Observations refer to the following:

   a. Receiving Waters

      (1) Discoloration and turbidity: description of color, source, and size of affected area.

      (2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.

      (3) Evidence of beneficial water use: presence of water-associated wildlife, fishermen, and other recreational activities in the vicinity of the sampling station.

      (4) Hydrographic conditions, such as water level, high and low tides, or floods.

      (5) Weather conditions:

         (a) Wind direction and estimated velocity.
         (b) Precipitation - total during the previous five days and on the day of observation.

   b. Perimeter of the waste management unit.

      (1) Evidence of liquid leaving or entering the waste, estimated size of affected area and flow rate. (Show affected area on a sketch)

(2) Evidence of odors, presence or absence, the characteristic, intensity, source, and distance of travel from the source.

(3) Evidence of erosion and/or "day-lighted" refuse.

c. The waste management unit

(1) Evidence of ponded water at any point on the waste management facility.

(2) Evidence of odors, presence or absence, the characteristic, source, intensity, and distance of travel from the source.

(3) Evidence of erosion and/or "day-lighted" refuse.

4. Standard analyses and measurements refer to:

a. pH
b. Specific conductivity in micromhos/cm
c. Chloride in mg/l
d. Total dissolved solids in mg/l
e. Total organic carbon in mg/l
f. Nitrate nitrogen in mg/l
g. Total Kjeldahl nitrogen in mg/l
h. Phenol in mg/l
i. Water elevation in feet above mean sea level
j. Settleable solids in ml/l/hr
k. EPA Method 601, identifying all peaks greater than 1 microgram/l

D. SCHEDULE OF SAMPLING, ANALYSES, AND OBSERVATIONS

The discharger is required to perform observations, sampling, and analyses according to the schedule specified in Part B, and the requirements of Article 5 of Subchapter 15, Chapter 3, Title 23, of the California Administrative Code. Groundwater monitoring sampling shall be monthly during the first 4 months of operation then quarterly thereafter for the establishment of background Water Quality Protection Standards (WQPS).

E. RECORDS TO BE MAINTAINED

1. Written reports shall be maintained by the discharger and shall be retained for a minimum of three years.

This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board. Such records shall show the following for each sample:

1. Identity of sampling and observation station by number.

2. Date and time of sampling and/or observations.

3. Date and time that analyses are started and completed, and name of personnel performing the analyses.

4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used. A reference to a specific section of Standards Methods is satisfactory.

5. Calculation of results.

6. Results of analyses and/or observation.

F. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Written self-monitoring reports shall be filed each quarter (unless specified otherwise in Part B) by the 15th day of the following month. In addition, an annual report shall be filed as indicated in F.2 below.

   a. Letter of Transmittal:

      A letter transmitting the essential points in each self-monitoring report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the past quarter and actions taken or planned for correcting violations, such as operation modifications and/or facilities expansion. If the discharger has previously submitted a detailed time schedule for correcting violations, a reference to the correspondance transmitting such schedule will be satisfactory. If no violations have occurred in the last quarter this shall be stated in the letter of transmittal. Monitoring

reports and the letter transmitting reports shall be signed by a principal executive officer at the level of vice-president or his duly authorized representative if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

b. Each report shall include a compliance evaluation summary sheet. This sheet shall contain:

1. The sample mean and sample variance for all sample sets taken from all compliance points, and shall determine if the difference between the mean of each sample set and the water quality protection standards is statistically significant at the 0.05 level using Cochran's Approximation to the Behrens-Fisher Student's t-test as described in Appendix II of Subchapter 15. The discharger may propose an alternative statistical procedure to be used in making this determination pursuant to Section 2555(h)(3) of Subchapter 15. If a statistically significant difference is found this shall be reported as a suspected requirement violation in the letter of transmittal.

2. A description of the velocity(s) and direction(s) of groundwater flow under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations.

c. A map or aerial photograph shall accompany each report showing sampling and observation station locations.

d. Results of analyses and observations specified in Part B must be included with each report. The laboratory director shall sign the laboratory statement of analytical results.

2. By January 30 of each year the discharger shall submit an annual report to the Regional Board covering the previsous calendar year. The report shall contain:

   (a) Tabular and graphical summaries of the monitoring data obtained during the previous year.

   (b) A comprehensive discussion of the compliance record and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.

   (c) A map showing the area, if any, in which filling has been completed during the previous calendar year.

   (d) A written summary of the groundwater analyses indicating any change in the quality of the groundwater.

   (e) Evaluation of effectiveness of the leachate collection and removal system.

3. A well drilling log shall be submitted for each sampling well established per this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards contained in Subchapter 15. All monitoring wells shall be logged during drilling under the direct supervision of a registered geologist, logs of monitoring wells shall be filed with the Department of Water Resources pursuant to Water Code Section 13751.

4. Pursuant to Provision No. 1 of this Order, prior to the placement of waste in any of the fill areas, the discharger shall submit to the Regional Board a report signed by a registered engineer or a certified engineering geologist that will document compliance with all Provisions, Specifications, and Prohibitions contained in this Order. This report shall include the geologic map required in Provisions No. 4 of this Order.

PART B

I. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATION, SAMPLING AND ANALYSES

A. Waste Monitoring

1. Record the total volume and weight or refuse in cubic yards and tons disposed of at the site during the month. Report this information quarterly.

2. Record the total volume and weight of sludges in cubic yards and tons disposed of at the site during the month. An average solids content should also be reported for each sludge. Report this information quarterly.

3. Record the volume of fill completed, in cubic yards, showing the location(s) and dimensions on a sketch or map. Report this information quarterly.

B. On-site observation

STATION	DESCRIPTION	OBSERVAIONS	FREQUENCY
V-1 thru V-'n'	Located on the waste disposal area as delineated by a 500 foot grid network.	Standard observations for the waste management unit.	Weekly
P-1 thru P-'n' (permeter)	Located at equidistant intervals not exceeding 1000 feet around the perimeter of the disposal area.	Standard observations for the perimeter.	Weekly

A map showing visual and perimeter compliance points (V and P stations) shall be submitted by the discharger in the first quarterly monitoring report.

C. Seepage monitoring

STATION	DESCRIPTION	OBSERVATIONS	FREQUENCY
S-1 thru S-'n' (seepage)	At any point(s) at which seepage is found occurring from the disposal area	Standard observations for the perimeter, and standard analyses other than "i"	Daily until remedial action is taken and seep ceases
CU-1 (receiing waters, upstream)	Located in the receiving water 200 feet upstream from the uppermost point of seepage discharge(s)	Standard observations for receiving waters and	Daily, during a seepage event
		Standard analyses other than "i"	"
CD-1 thru CD-N (receiving waters, downstream	Located in the receiving water(s) 200 feet downstream from the point of seepage discharge(s)	Same as receiving waters, upstream	Same as receiving waters, upstream

D. Groundwater Monitoring

STATION	DESCRIPTION	OBSERVATIONS/ ANALYSES	FREQUENCY
GW-1 and GW-6 (ground water background)	Located as shown in the discharger's August 1985 submittal	Standard analyses other than "j"	Once each quarter

GW-2 thru GW-5 including Lysimeter (ground water)	Located as shown in the dischargers August 1985 submittal	Standard analyses other than "j"	Once each quarter, commencing one quarter in advance of placement refuse in the fill area to be monitored

E. Stormwater Runoff monitoring

STATION	DESCRIPTION	OBSERVATIONS/ ANALYSES	FREQUENCY
R-1 thru R-3	Located at the 3 rip-rap discharge outlets on the western edge of the landfill	All standard analyses other than b, c, and i	Monthly during the period Nov. 1 thru May 1*

* Take a minimum of 3 grab samples on the day of the sampling during normal working hours. The first sample for each day shall be taken during the first hour of discharge, and the others at equal time intervals thereafter. The three samples shall be combined and analyzed.

F. Leachate monitoring

STATION	DESCRIPTION	OBSERVATION	FREQUENCY
L-1 thru L-'n'	Leachate control facilities both sumps and wells	Volume of leachate removed	Observe at time of removal, report quarterly

II. CONTINGENCY REPORTING

A. A report shall be made in writing to the Regional Board within seven days if a statistically significant difference is found between a self-monitoring sample set and a WQPS. Notification shall indicate what WQPS(s) have been exceeded. The discharger shall

immediately resample at the compliance point(s) (monitoring point) where this difference has been found and analyze another sample set of at least four portions split in the laboratory from the source sample.

B. If resampling and analysis confirms the earlier finding of a statistically significant difference between self-monitoring results and WQPS(s) the discharger must submit to the Regional Board within 90 days an amended Report of Waste Discharge for establishment of a verification monitoring program meeting the requirements of Section 2557 of Subchapter 15. This submittal shall include the information required in Section 2556(b)(2) of Subchapter 15.

C. The discharger must notify the Regional Board within seven days if the verification monitoring program finds a statistically significant difference between samples from any verification monitoring program point of compliance and the WQPS(s).

D. If such a difference or differences are found by the verification monitoring program it will be concluded that the landfill is out of compliance with this Order. In this event the discharger shall submit to the Regional Board within 180 days an amended Report of Waste Discharge requesting authorization to establish a corrective action program meeting the requirements of Section 2558 of Subchapter 15. This submittal shall include the information required in Section 2557(g)(3) of Subchapter 15.

E. A report shall be made by telephone of any seepage from the disposal area immediately after it is discovered. A written report shall be filed with this Board within five days. This report shall contain the following information: (1) a map showing the location(s) of discharge, (2) approximate flow rate, (3) nature of the effects; i.e., all pertinent observations and/or analyses, and (4) corrective measures underway or proposed.